



SPECIAL RADIOLOGICAL PROCEDURES

CONTRAST MEDIA

Sawa University

جامعة ساوة الاهلية

College of health and medical techniques

كلية التقنيات الصحية والطبية

Department of Radiology Tech.

قسم تقنيات الأشعة والسونار

Stage second

المرحلة الثانية

محاضرة رقم 7

الجانب النظري

Lecture No.7

Theoretical

تدريسي المادة : سهى رحيم هلال

Barium enema



It is the radiographic study of the large bowel by administration of the contrast medium through the rectum.

The purpose of the barium enema is to know the form and function of the large intestine and to detect any abnormal conditions.

Anatomy review



LARGE BOWEL

The large intestine, which is the terminal part of gastrointestinal (GI) tract.

It consist of :

1- Cecum (the widest part of large intestine)

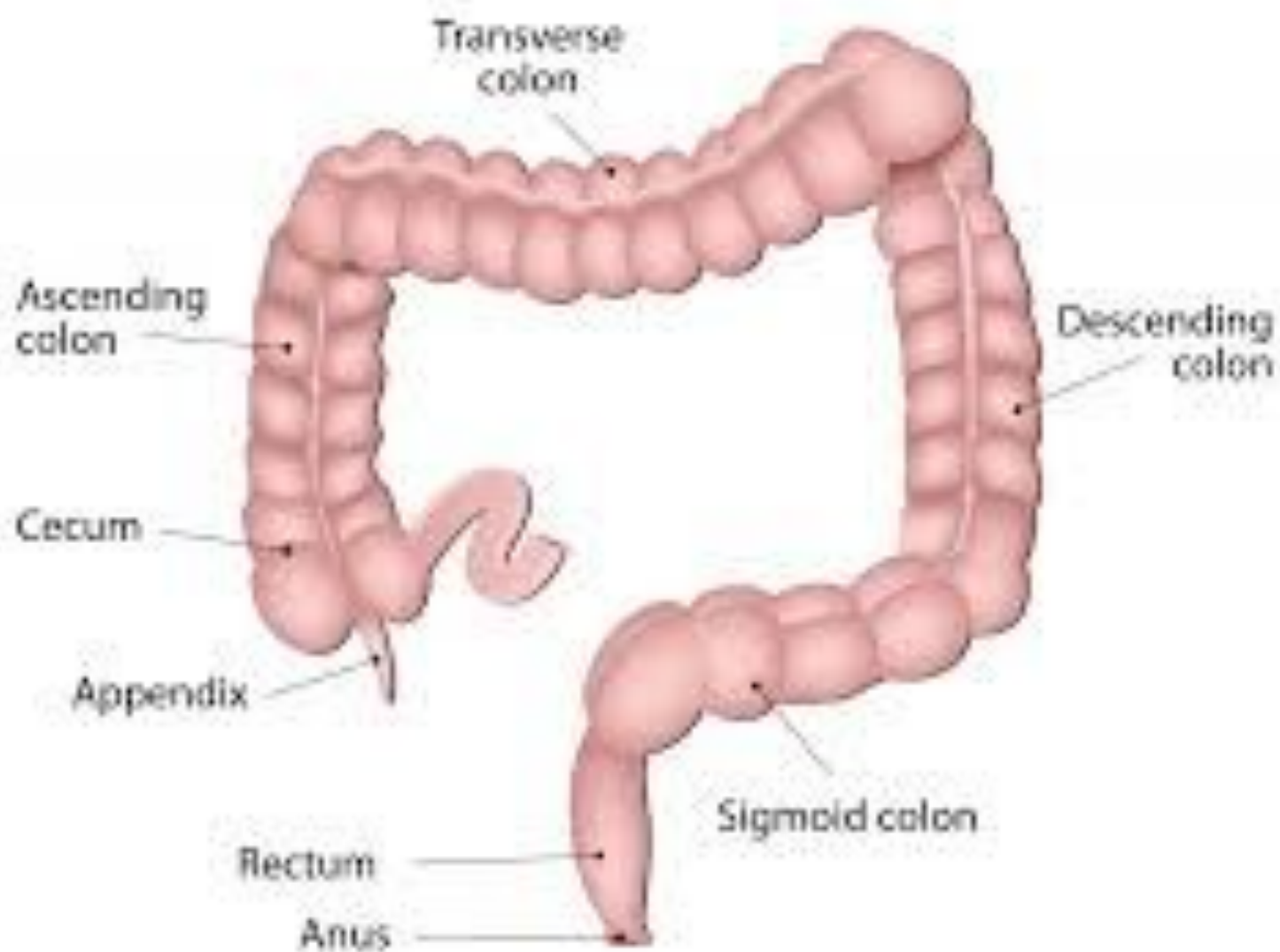
Ascending colon

2- Transverse colon

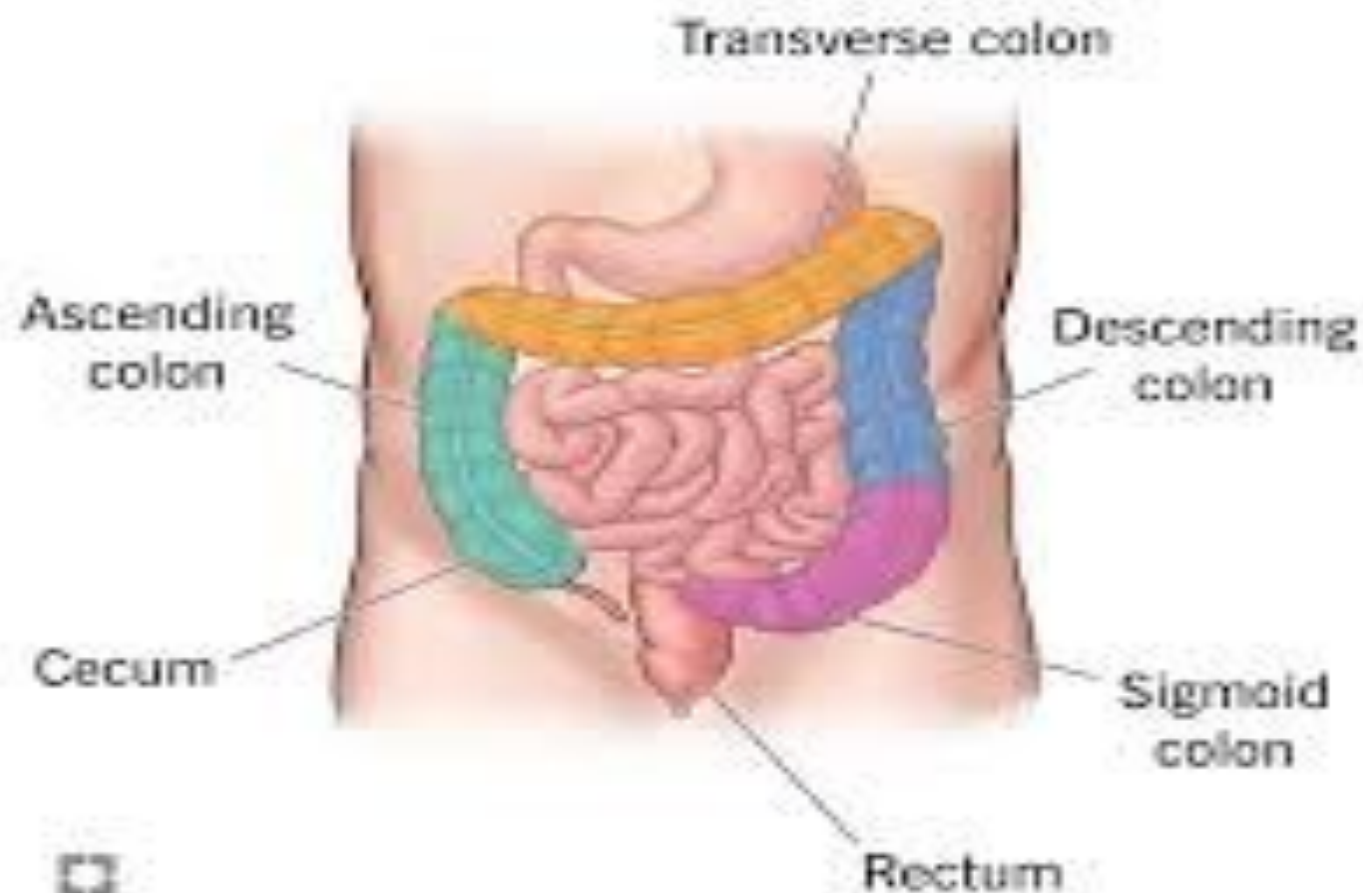
3- Descending colon

4- Sigmoid colon (the narrowest part of colon)

5- Rectum and anal Canal



Large intestine & colon





Methods



- 1.** Double contrast—the method of choice to demonstrate mucosal pattern
- 2.** Single contrast—uses:
 - (a)** Localization of an obstructing colonic lesion (use water-soluble contrast, as surgery or stenting may be required shortly after the procedure)
 - (b)** Children—since it is usually not necessary to demonstrate mucosal pattern
 - (c)** Reduction of an intussusception

Indications



If a tight stricture is demonstrated, only run a small volume of barium proximally to define the upper margin,

Contraindications



Absolute

- 1-Toxic megacolon .
- 2-Pseudomembranous colitis.
- 3- Recent biopsy.



Relative

- 1-** In complete bowel preparation. Consider if the patient can have extra preparation to return later that day or the next day.
- 2-** Recent barium meal. It is advised to wait for 7–10 days
- 3-** Patient frailty.



Contrast Medium

- 1-Polibar 115% w/v 500 mL (or more as required)
2. Air

Equipment

Disposable enema tube and pump.

Procedure



- 1- A Scot AP film for abdomen is taken– if retained stool is present consider rescheduling.
- 2- The patient lies on their left side with right leg flexed with SIM's position.
- 3- The catheter tip is lubricated and inserted into rectum, the insertion should not exceed 3-4cm and it is taped firmly in position
- 4- inflate the rectal balloon if necessary

Exposures



- 1-** LT lateral rectum; then roll the patient halfway back.
- 2-** RAO sigmoid; then roll the patient prone and insufflate to distend transverse colon. The patient lifts left side up to obtain.
- 3-** LPO sigmoid; then turn the patient supine.
- 4-** AP view(s) of whole colon.

The patient should be elevated, barium drained, and colon Rein flated to improve sigmoid colon views, using LAO and RAO positioning for splenic and hepatic flexures.

Over couch views



- 1- Left lateral decubitus
- 2- Right lateral decubitus
- 3- Prone angled view of recto sigmoid
- 5- RAO positioning .
- 4- Dedicated views of the caecum and right colon.
- 6- Dedicated views of any pathology encountered.

Spot films



Spot films for all areas of large bowel will be including:

- 1-** Rectum : PA and left lateral view
- 2-** Sigmoid : LPO and right lateral view
- 3-** Splenic flexure : RPO view
- 4-** Hepatic flexure : LPO view
- 5-** Cecum : AP and LPO view

Complications (all are rare)



- 1-** Cardiac arrhythmias induced by Buscopan or the Procedure itself. This is the most frequent cause of death after barium enema.
- 2-** Perforation of the bowel (often related to manipulation of the rectal catheter balloon) is the second most common cause of death after barium enema.
- 3-** Transient bacteraemia.
- 4-** Intramural barium.
- 5-** Venous intravasation.
- 6-** Side effects of the pharmacological agents used.

After care



- 1-** The patient must not drive until any blurring of vision produced by Buscopan has resolved, usually within 30 min.
- 2-** Patients should be warned that their bowel motions will be white for a few days after the examination.
- 3-** They may eat normally and should drink extra fluids to avoid barium impaction.



THE 'INSTANT' ENEMA

It is a single contrast technique barium enema used to identify/ confirm the level of suspected large bowel obstruction and to assess the degree of narrowing.

contraindications



Toxic Megacolon

Rectal biopsy (as for barium enema)

Chronic ulcerative colitis &

Crohn's disease

Indications



- 1-** To confirm the suspected level of large bowel obstruction and assess the degree of narrowing, potentially aiding in stent planning.
- 2-** Rarely, to show the extent and severity of mucosal lesions in active ulcerative colitis.



Contrast medium

- Water-soluble contrast (e.g. Urografin 150).

Preliminary Image

Plain abdominal film—to exclude:

Toxic Megacolon

Perforation

Techniques

1-The contrast medium is run until it flows into an obstructing lesion or dilated bowel loops.

2- Air insufflation is not required (i.e. single contrast technique).

Images

are obtained as needed, including views of pathology encountered:

1-Prone,

2-LT lateral decubitus

3-Erect films as needed.



AIR ENEMA

- Very rarely used.

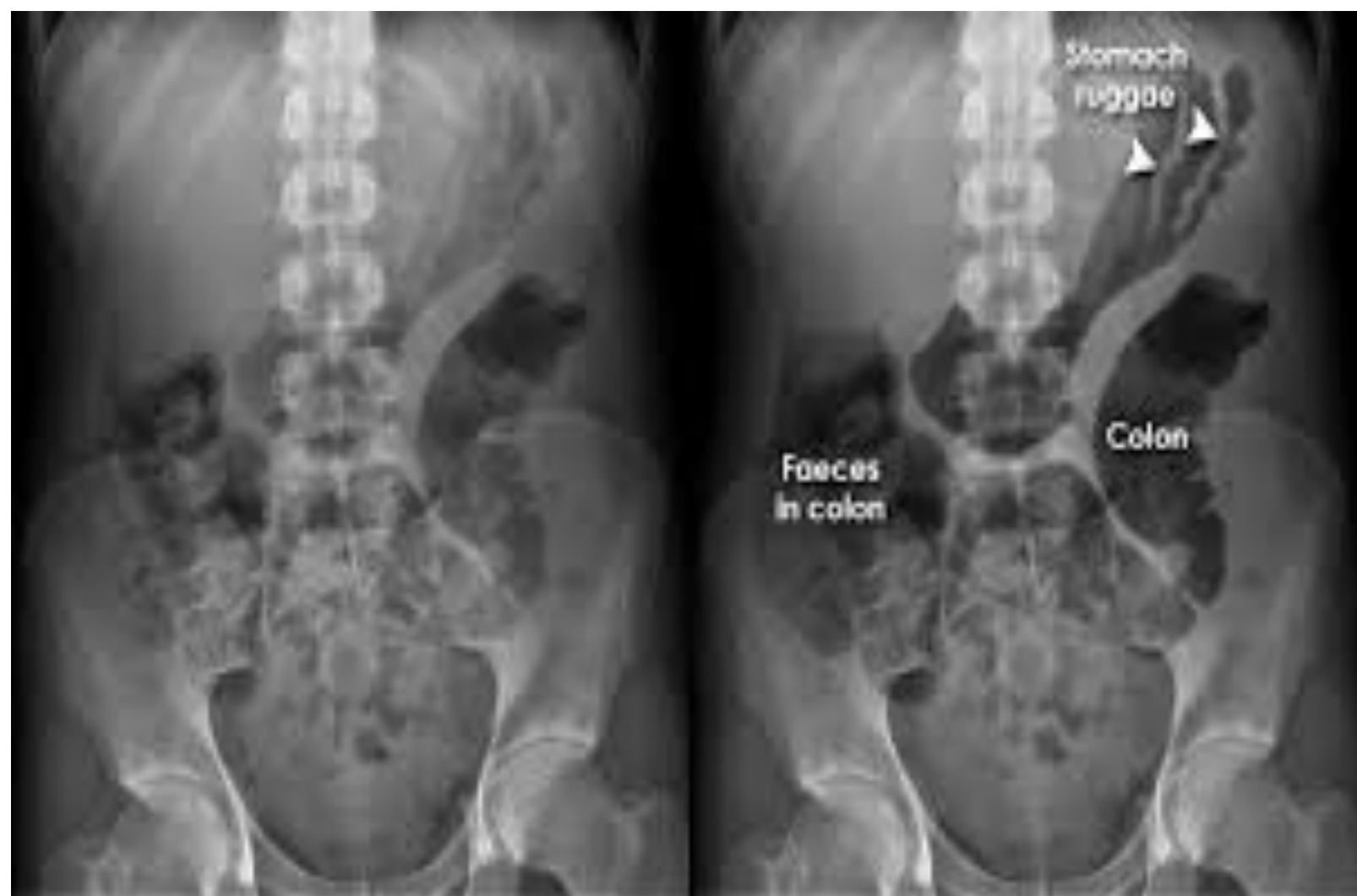
Indications

Demonstrate extent of
ulcerative colitis



The barium is
released into
the rectum







SIM'S POSITION



What to Expect During a Barium Enema

1.

24 hours before test: Laxatives and liquid diet clear colon



2.

Lubricated enema tube placed in rectum



3.

Mixture of barium sulfate and water fills colon



4.

X-rays taken for 15-20 minutes

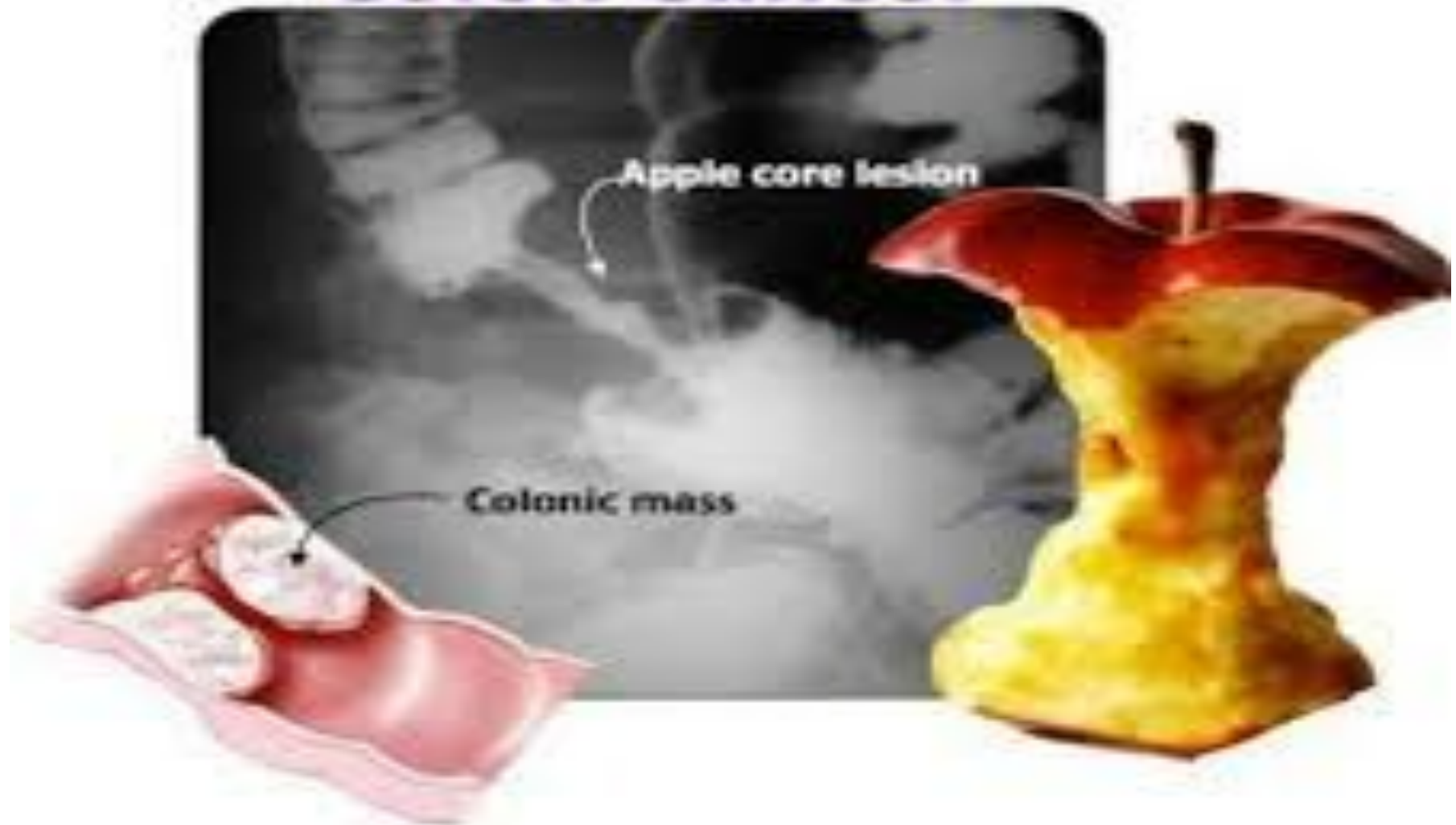


5.

Barium solution is drained through tube



Colon Cancer



Thank
you

